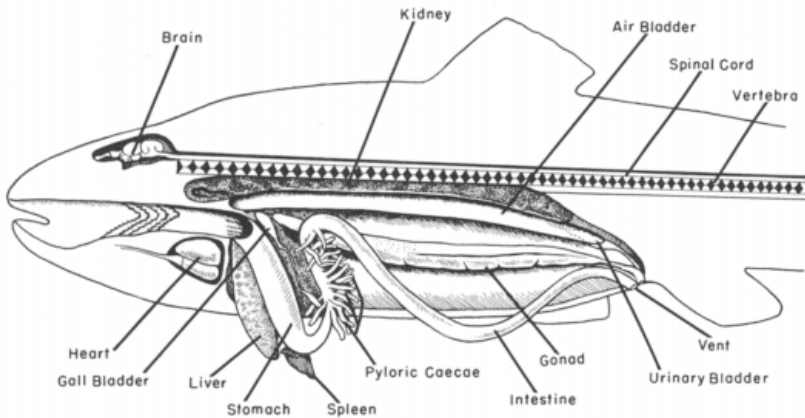


# LIFE STORY OF THE TROUT

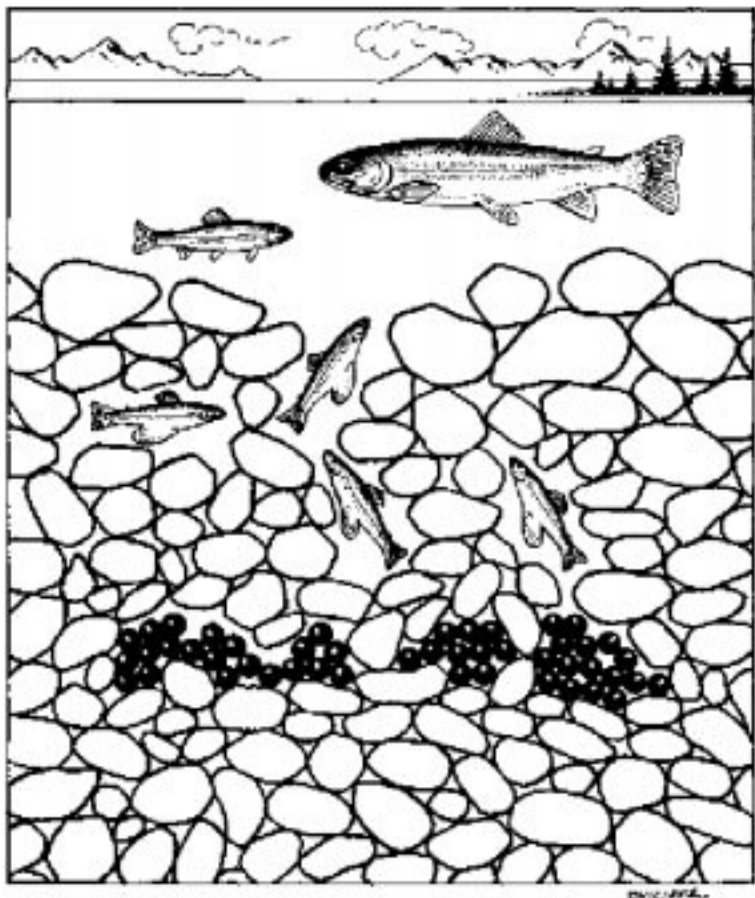


*The internal organs of a trout*

## SPAWNING

*Rainbow trout.* Wild rainbow generally spawn in the spring, usually February through June, but there are exceptions to this, as there are to almost everything else that trout do. Some strains of domesticated rainbow in our hatcheries have been bred to spawn in the fall, so that their offspring will be larger at planting time.

The place of spawning for rainbow is in streams, usually the smaller, swifter streams of clear, cool, unpolluted water. The male and female meet at some point in the stream where the size and depth of the gravel are satisfactory. The gradient of the stream bed and the depth and velocity of the water must meet certain requirements, for it is necessary that the flow of water through the gravel be sufficient to keep the eggs well oxygenated and free of smothering silt. Once the pair of spawners has found the gravel bed which fulfills all of their requirements, the female proceeds to dig a pocket, into which she will deposit her eggs. With strong flips of her tail, she throws aside the gravel until a depression has been formed. A large steelhead rainbow weighing 10 pounds may dig a pocket measuring two feet long, a foot wide, and 10 inches deep, while small "resident" rainbow of the mountain brooks will dig much smaller pockets corresponding to their size.



Trout eggs are *buried* in the gravel of a stream bed, several inches beneath the surface. When they hatch, the fry (alevins) remain in the spaces between the gravel until the yolk sac is absorbed. At that time they work their way up to the surface and escape.

Once the pocket has been completed, the female, with rapid, vibratory contractions of her body muscles, expels a part of her ripe eggs and as they spurt forth the male ejects a stream of white milt into the gravel pocket with the eggs. Even though the water flows swiftly over the depression, the back eddy formed within the pocket holds the eggs and the sperm together until the female can cover them with loose gravel. In the meantime, the soft eggs are absorbing water and soon become perfectly round. Within the first few seconds after spawning, one of the many thousands of spermatozoa released by the male fish has entered the egg through a minute opening called the micropyle and fertilization is completed.

Into the first gravel pocket the female and the male have put only a part of their eggs and milt. She must dig more such pockets into which more eggs are laid and fertilized. Normally, these pockets are dug one upstream from the other, so that in forming the second depression the gravel is washed down and helps cover the first pocket formed. The completed series of covered pockets is called a redd.

The size and number of trout eggs vary in more or less direct relation to the size of the female. A six-inch trout of a small tributary stream will lay 200 or 300 small, amber-colored eggs, while a large steelhead may produce 6,000 or more.

Other kinds of trout have spawning habits which are more or less similar to those of the rainbow. Some differences have been mentioned elsewhere in the booklet. The lake trout and the eastern brook trout are the only trout which commonly spawn in lakes. All of the others spawn in streams. The time of spawning for the cutthroat, Piute, and golden is in the spring and early summer; for the brown, brook, Dolly Varden, and lake trout it is in the fall.

## DEVELOPMENT OF TROUT

*The egg.* After trout eggs have been deposited and fertilized, they are usually covered with gravel, although in the case of the lake trout the eggs are simply dropped into the crevices of broken rock. Any developing egg must have oxygen and it is essential, therefore, that trout eggs be kept free of silt and be continually bathed by fresh, well aerated water. Most types of pollution are harmful and sometimes lethal to developing trout eggs and one of the important functions of any conservation agency is to see to it that trout waters are not polluted.

The length of time required for a trout egg to hatch largely depends upon the water temperature. Rainbow eggs will hatch in 80 days when the water averages 40 degrees Fahrenheit. If the temperature were 55 degrees, they would hatch in 24 days. Those eggs which are laid in the fall, when the water is cold, nearly always remain in the gravel all winter and hatch in the spring or early summer when temperatures increase. At hatching time the egg shell breaks open and the little fish emerges carrying its sac of yolk and for several weeks that is all the food it has to live on. When the yolk has been absorbed, the fry work their way up through the gravel and start to look about for tiny aquatic animals to eat.